

**REMARKS:**

INFORMATION DISCLOSURE STATEMENT FILED AUGUST 3, 2001

The Applicants submit that an Information Disclosure Statement (IDS) was filed on August 3, 2001. The Applicants  
5 received a return receipt postcard (MPEP 503) indicating that the Office had received the IDS. The Office Action Summary included under the heading "Attachment(s)" an indication that the Examiner had considered the art cited in the August 3, 2001 IDS. However, a copy of the PTO-1449  
10 signed by the Examiner did not accompany the Office Action. Therefore, the Applicants respectfully request that the Examiner provide a copy of the corresponding PTO-1449 indicating that he has considered the August 3 2001 IDS.

ELECTION/RESTRICTION

15 In the Office Action dated October 31, 2002, the Examiner required restriction to one of the following inventions under 35 USC 121:

Group I: Claims 1-16, 23 and 24 drawn to an etching method.

Group II: Claims 17-22, and 25 drawn to a MEMS comb drive  
20 structure.

In making the requirement the Examiner stated that the inventions are distinct if either the claimed process can be used to make a materially different product or that the claimed product can be made by a materially different  
25 process. The Examiner asserts that the claimed product can be made by a materially different process, e.g., without the use of a mask.

The Applicants hereby provisionally elect, Group I: claims 1-16, 23 and 24, with traverse.

30 The Applicants traverse the requirement on the grounds that claim 1 or alternatively, claim 16, is a claim to the necessary process of making a product that links proper product and process claims. (MPEP 809.03). The Applicants

submit that should claim 1 or 16 be allowed, the Examiner must rejoin and examine all non-elected claims linked by claims 1 or 16, i.e., claims 17-22, and 25 (see MPEP 809.04).

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#### CLAIM REJECTIONS

##### 35 USC 112

The Examiner has rejected claims 10-15 and 23 under 35 USC 112, second paragraph, as being indefinite. The Examiner states that there is no antecedent basis in claim 1 for  
10 "exposed areas" as recited in claim 10. To expedite prosecution the Applicants have amended claim 10 to delete the words "of the" before "one or more exposed areas." As such, claim 10 as amended now includes proper antecedent basis for "exposed areas" in claims 10-15 and 23. As such,  
15 the Applicants submit that the amendment to claim 10 overcomes the rejection.

Furthermore, the Applicants submit that this amendment merely makes explicit that which was implicit in claim 10 as originally filed. As such, no new matter has been added  
20 with this amendment. Furthermore, this amendment does not narrow the scope of any limitation or element of claim 10 within the meaning of the decision in *Festo Corp. v. Shoketsu Kogyo Kabushiki Co., Ltd.*, 234 F3d 558, 566, 56 U.S.P.Q.2d 1865 (Fed. Cir. 2000) 535 U.S. 722, 152 L. Ed. 2d  
25 944, 122 S. Ct. 1831, (2002).

##### USC 102 - Shaw et al.

The Examiner has rejected claims 1-5, 7, 9, 10-16, 23 and 24 under 35 USC 102(b) as being anticipated by U.S. Patent 5,426,070 to Shaw et al. (hereinafter Shaw). In rejecting  
30 the claims, the Examiner states that Shaw teaches a method for the controlled release of structures as follows: Trenches are formed in a silicon device layer (Fig. 1E). Structures are defined on each side of the trench. An etch-stop material (silicon dioxide) is deposited in the trench

and over the surface of the device layer (Fig. 1F). Openings are formed in the etch-stop material (Fig. 1G). The surface of the device layer is masked (Fig. 1H), and the structure is released by etching (Fig. 1I). The etching  
5 undercuts a portion of the etch-stop material (Fig. 1I). The layer of device material is disposed between two layers of etch-stop material (Fig. 1I). A structural layer is formed proximate to the device layer and is protected from the silicon layer by the etch-stop layer (Fig. 1J). A  
10 portion of this structural layer is released, and contains two sub layers (Fig. 1J).

The Applicants respectfully traverse the rejections. The Applicants submit that Shaw does not teach "filling" the trenches with an etch-stop material as recited in claims 1  
15 and 16. The American Heritage College Dictionary (3<sup>rd</sup> Edition, 1993, Houghton Mifflin Company) at page 509 defines the word "fill" to mean: 1a. to put into as much as can be held. 1b. To supply to the fullest extent. 1c. To build up the level of (low-lying land) with material such as earth or  
20 gravel. 1d. To stop or plug up (an opening, for example). Other relevant definitions include 5.a. To occupy the whole of; and 5.b. To spread throughout.

Shaw, by contrast, teaches that forming deep trenches in silicon by etching with  $\text{Cl}_2/\text{BCl}_3$  *lines* the trenches with a  
25 thin layer of silicon dioxide 24 (see Fig. 1E and col. 10, lines 31-36). Subsequently, Shaw teaches coating the entire wafer with a protective oxide layer 28 (see Fig. 1F and col. 11, lines 61-66). Note that that Shaw's Fig. 1F shows that silicon dioxide layer 28 lines the walls and floor of the  
30 trench 22 but does not "fill" the trench as recited in claims 1 and 16.

Furthermore, since Shaw doesn't teach filling the trenches, he can't and doesn't teach etching portions of the device layer between the filled trenches as recited in claims 1 and  
35 16.

Thus, for the above reasons, the Applicants submit that Shaw does not teach or suggest all of the limitations of independent claims 1 and 16. As such, claims 1 and 16 define an invention suitable for patent protection.

5 Furthermore, dependent claims 2-15, 23 and 24 depend, either directly or indirectly, from claims 1 or 16 and recite additional features therefor. As such, and for the same reasons set forth above with respect to claims 1 and 16, the Applicants submit that these dependent claims define an  
10 invention suitable for patent protection.

CLAIM REJECTIONS 35 USC 103

Shaw et al.

The Examiner has rejected claims 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Shaw. In making the  
15 rejection, the Examiner states that Shaw teaches the method substantially as claimed but uses reactive ion etching instead of wet etching as recited in claim 6. Furthermore, the Examiner states that Shaw teaches the use of a crystalline silicon substrate instead of a silicon-on-  
20 insulator substrate as recited in claim 8.

With respect to claim 6 The Examiner argues that U.S. Patent 5,084,419 to Sakao (hereinafter Sakao) teaches, at col. 5, lines 17-24, that wet etching and dry etching are art recognized equivalents for the purpose of etching grooves in  
25 silicon. The Examiner concludes that it is prima facie obvious to substitute one art-recognized equivalent for another.

With respect to claim 8, the Examiner argues that claim 8 is obvious since it is common practice to fabricate a  
30 semiconductor device using a silicon-on-insulator substrate as a starting material. The Examiner cites *Silicon Processing for the VSLI Era*, vol. 4, pp 14-15, in support of his argument.

The Applicants respectfully traverse the rejection. As described above, Shaw does not teach "filling" the trenches or etching portions of the device layer between the filled trenches as recited in claim 1. The Examiner has not  
5 pointed to anything in any of the cited prior art tending to teach or suggest these features of claim 1. Claims 6 and 8 depend directly from claim 1. Since no cited combination of Shaw with skill in the art teaches or suggests claim 1, no cited combination of Shaw with skill in the art teaches or  
10 suggests claims 6 or 8 and a prima facie case of obviousness is not present. Therefore, the applicants submit that claims 6 and 8 are not obvious over Shaw and define an invention suitable for patent protection.

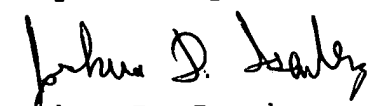
#### OTHER REFERENCES CITED

15 The Examiner has cited U.S. Patent 5,770,465 to MacDonald et al. The Examiner hasn't cited this patent in any claim rejections. The Applicants submit that this reference is not relevant to any of the present claims since it does not teach or suggest the claimed features, either by itself or  
20 in combination with other art cited.

#### CONCLUSION

In view of the above amendments and remarks, the Applicants submit that all pending claims are allowable over the prior art of record and that none of the pending claims are  
25 indefinite. Therefore, the Applicants respectfully request that the Examiner reconsider the application and issue a Notice of Allowance in the next Office Action.

Respectfully submitted,

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